

#### ABSTRACT OF THE DISCLOSURE

A radio base station (RBS) reduces the signaling overhead associated with maintaining rapidly updated estimates of transmit power headroom for a plurality of mobile stations. According to an exemplary embodiment, the RBS receives relatively infrequently periodic full reports from each mobile station that include an indication of the current transmit power headroom of the mobile station. The RBS then tracks the changes in the mobile station's headroom over the intervals between full reports based on reverse link power control information associated with the mobile station. The RBS adjusts the stored headroom value based on the reverse link power control commands sent by it, or based on power control decision feedback from the mobile station. In either case, use of the power control information keeps the stored headroom value accurate even over relatively long full reporting intervals.